	Providing and laying/fixing cement base, precast pre polished cement concrete, designer tiles 25mm thick conforming to IS 1237 heavy duty tiles for flooring reads of steps of steps and landin, laid on a bed of 12mm thick cement mortar 1:3 mis finished with flush pointing using white cement, including cost of material,s including cutting, griding the edge ti half/ful rounf wherever requires labour, curing complete as per specification Page No. 112 / Item No. 14.62 / PWD SR 2018-19								
		2	4	2.50		0.45	9.00		
							9.00		
		v					9.00	1305.92	11753.0
	Basic Rate	1232.00							
	Area Weightage @ 6%	73.92							
	Total	1305.92							
53	KSRB 7.7 : Providing and fixing in position in cement concrete 1:3:6 steel glazed windows and ventilators side hung/top hung fully openable as per approved drawings using Z angles of 25x33x3mm, weighing 1.419Kg/m both for outer and inner frames and central mullion section of size 25x46x3mm weighing 2.28Kg/m duly providing T section 19x19x3mm weighing 0.839 kg/m for glazing of windows not more than 34 cms. c to c including providing and fixing 4mm thick reeded glass with teakwood beading of required size, all steel section should confirm to I.S. 7452:1990, 4nos, of holdfasts of approved size section should be cut to length welded and electrically grinded subdividing frames of unit shall be tenonned and revetted into the frames electrically. All the steel surface shall be thoroughly cleaned free of rust and painted with one coat of anti-corosive paint and finishing with two coats of ready mix paint of approved colour and make including cost of materials, fixtures, labour and HOM of machinery complete as per specifications. Specification NO. KBS 7.12.1 / 7.12.2 / 7.12.3 / 7.12 Page No. 34 / Item No. 7.7/ PWD SR 2015-16								
		2	2	0.90		0.60	2.16		
							2.16		
		Sqm					2.16	4131.88	8925.0
	Basic Rate	3898.00							
	Area Weightage @ 6%	233.88							
	Total	4131.88							
54	KSRB: 7.5 Providing and fixing pull and push type rolling shutters of approved make out of 18 guage, 75mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements for steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & outside locking with push & operations complete Including pulling hooks, 4nos handles wit hall fittings and accessories, painted with a coat of red lead paint (without top cover) cost of materials, labour, HOM of machinery complete as per specifications. Shutter size 3mx2.8m Specification NO. KBS 7.10 / 7.12 Page No. 33 / Item No. 7.5/ PWD SR 2015-16								
		2	1	3.00		2.50	15.00		
							15.00		
		Sqm					15.00	2763.42	41451.0
	Basic Rate	2607.00							
	Area Weightage @ 6%	156.42							
	Total	2763.42							
55	Providing R.O. Plant								

	Providing revsrse osmosis system to cover 2000 Liters of High TDS water per hour								
	TECHNICAL SPECIFICATIONS								
	Flow Rate:								
	Feed Water : 5000 LPH								
	Treated Water : 3000								
	Reject Water : 2000								
A	RAW WATER PUMP								
	Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure for								
B	SAND MEDIA FILTER								
	Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul the								
C	ACTIVATE CARBON FILTER								
	Purpose:- To remove the total color, smell, odor from the water.								
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size bed depth : 1500 mm pipelines & Accessories : Pipe of PVC 10 Bar tested pressure testing cock & pressure gauges at intlet - outlet of system								
	DOSING SYSTEM								
	Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes								
D	MICRON FILTER								
	Purpose : To remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.								

	HIGH PRESSURE PUMP								
	Purpose : To feed the reverse Osmosis membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery								
	RO membrane housing.								
	Purpose : To pack membrane and operate at high pressure.								
	RO MEMBRANES								
	Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the Recovery.								
	RO CLEANSING SYSTEM								
F	ELECTRICAL PANEL								
	Purpose : A control panel is provided as a safety measure for the pumps & other electrical items.								
	Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches.								
	INSTRUMENTATION								
	Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c). High pressure switch : To protect RO pump from back pressure d) Pressure Gauges : For calculate AP for each unit in RO system								
	PH DOSING SYSTEM								

	Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filteration & SS from HPP to thhe premeter line termination point NRV's pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis plant stainless steel tank (2kl) Raw water tank (5kl) with stainless steel pipe line required for plant erection.	Nos	2	1						
	ELECTRIFCATION							2.00	515000	1030000.0
56	Supplying and wiring adopting loop system in existing PVC Conduit / casing capping using 1100V grade, COPPER conductor flexible multistrand FRLS PVC insulated, 2 X1.5Sq.mm Cable confirming to the GTP, with a 6Amps flush type SP control switch shall be fixed on the existing plastic sheet / gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet. GROUP A (Page No. 05, Item No.2.1 KPWD SR 2014-15									
	b) Medium point above 3Mtr upto 6Mtr from tapping point to out let via switch	Point	2	2				4.00	245.0	980.0

	c) Long point above 6Mtr upto 10Mtr from tapping point to out let via switch	Point	2	2			4.00	363.0	1452.0
57	Supplying and flush mounting teak wooden box without front plank, made of not less than 12mm thick wood, after due groove cutting, Finishing with necessary cement plastering complete (Page No. 03, Item No. 1.6) KPWD SR 2014-15								
	(1.6.5) 4"x4"x3" (101x101x76mm)	Each	12	2			24.00	68.0	1632.0
	(1.6.1) 12"x12"x3" (300x300x76mm)	Each	6	2			12.00	116.0	1392.0
	(1.6.3)10"x7"x3" (254x178x76mm)	Each	6	2			12.00	87.0	1044.0
58	Supplying 4mm thick plastic sheet with necessary nitches for fixing switches, regulators etc., and fixing on existing wooden or metal box using N.F. screws. (Page No. 17, Item No. 3.9) KPWD SR 2014-15	SqCM							
			2	6666.66			13333	0.25	3333.0
59	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete. upto 50mm conduit in brick wall (Page No. 03, Item No.1.7.1) KPWD SR 2014-15	Mtr							
			2	10			20.00	21.0	420.0

	Supplying heavy gauge PVC Conduit Pipe 19/20 mm dia 2 mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering up to the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary. (Page No. 02, Item No. 1.3.1) KPWD SR 2014-15	Mtr							
			2	10			20.00	56.0	1120.0
61	Supplying and fixing PBBC/Bakelite straight or slant batten holder and wiring with 60w/230 volts lamps. (Page No. 20, Item No. 4.2) KPWD SR 2014-15	Each							
			4				4.00	88.0	352.0
62	Supplying patti type fluorescent tube light fitting of 2' - suitable for 14 watts fluorescent tube fitting, made out of M.S. Sheet and stove enameled with HF Electronic Ballast , locking type brass contact holders mounted on double fold type sheet base fully wired for use on 230 volts AC . Supply including T5 lamp. (Page No. 20, Item No. 4.5) KPWD SR 2014-15	Each							
			8				8.00	591.0	4728.0

	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper with low conductor resistance single core wire in open or concealed system of wiring with specified IS-694:1990 & confirming to GTP of GROUP -A 1.5 sqmm (Page No. 06, Item No. 2.5.2) KPWD SR 2014-15	Mtr							
			2	5			10.00	18.6	186.0
64	Supplying and fixing cast Aluminum round or oblong type bulk head fitting with GI wire guard, glass cover with 60/100 watts 230V GLS lamp. (Page No. 20, Item No. 4.3) KPWD SR 2014-15	Each							
			8				8.00	747.0	5976.0
65	Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all-round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 122 mm dia (Page No. 55, Item No. 7.1) KPWD SR 2014-15	No							

	CISTON		2				2.00	2727.0	5454.0
	Earth work excavation for Foundation and removing the excavated stuff to a distance not exceeding 50mtrs and with a lift upto 1.50mts including shoring, strutting, barricading, danger lighting etc complete by Manual Means - in ordinary rock without Blasting (I.No.A.i RWS SR 12-13)								
		Cum	4.00	1.55	1.60	0.60	5.95		
	Basic rate	435.50					**5.95**	448.57	**2669.86**
	Sub Total-1	435.50							
	3% AW	13.07							
	Sub Total-2	**448.57**							
68	Providing and laying granite or basalt or trap jelly M-10 cement Concrete using 40mm and down size jelly for foundation laid in 15cm thick layers and well compacted including mixing by using hand mixers, curing etc complete as per specifications. (p17/I.2.1) RWS SR 2012-13								
		Cum	4.00	1.55	1.60	0.07	0.69		
	Basic rate	4631.00					**0.69**	4769.93	**3312.24**
	Sub Total-1	4631.00							
	3% AW	138.93							
	Sub Total-2	**4769.93**							
69	KSRB 5.1-3 : Providing and constructing granite / trap / basalt or sand stone, uncoursed rubble stone masonry in foundation with cement mortar 1:6 , bond stones at 2 m. apart for foundation including curing etc complete as per specifications. (p17/I.2.3) RWS SR 2012-13								
		Cum	4.00	1.55	1.60	1.10	10.91		
	Basic rate	4711.30					**10.91**	4852.64	**52952.00**
	Sub Total-1	4711.30							
	3% AW	141.34							
	Sub Total-2	**4852.64**							
70	Providing and laying granite or basalt or trap jelly cement Concrete M-10 proportion on using 20mm and down size jelly including machine mixing, laying tamping, curing and plastering for exposed face with cement mortar 1:4 proportion and with necessary centring form work etc complete- for basement (P.No.19.1 no. 2.6.1) RWS SR 2012-13								
		Cum	4.00	1.55	1.60	0.05	0.50		
	Basic rate	4981.90					**0.50**	5131.36	**2545.15**
	Sub Total-1	4981.90							
	3% AW	149.46							

	Sub Total-2	**5131.36**							
	Errection of RCC Hume pipe pump house/cistern on size stone masonry platform including transportation charges and handing with all necessary tools and plants complete as directed by the Engineer in charge of work (P.41/I.3.17)								
		Each	4.00				4.00		
							4.00	1378.86	**5515.44**
	Basic rate	1338.70							
	Sub Total-1	1338.70							
	3% AW	40.16							
	Sub Total-2	**1378.86**							
72	KSRB 15-18.2 : Providing and applying enamel metal paint two coats (excluding priming coat) over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, complete as per specifications. (Page No. 120 Item No. 15.74 of SR 2015-16).								
		Cum	4	0.79	1.2	2.500	9.48		
							9.48	99.93	**947.34**
	Basic rate	97.02							
	Sub Total-1	97.02							
	3% AW	2.91							
	Sub Total-2	**99.93**							
73	KSRB13-6.2-1 : Providing and fixing in position brass stop cock of approved quality 15mm nominal bore including cost of all materials, labour and HOM of equipments with all leads complete as per specifications. Specification No.KBS 13.2.2 / 13.3								
		Each	15				15.00		
							15.00	181.85	**2727.70**
	Basic rate	176.55							
	Sub Total-1	176.55							
	3% AW	5.30							
	Sub Total-2	**181.85**							
74	Providing and fixing to wall, ceiling and floor galvanised / mild steel tube 50mm dia nominal bore with fittings (medium grade weight 5.24kq/mtr) B class including cost of all materials, labour charges, HOM of equipments and testing complete as per specification, specification No KBS								
		Mtr	30				30.00		
							30.00	571.60	**17147.96**
	Basic rate	554.95							
	Sub Total-1	554.95							
	3% AW	16.65							
	Sub Total-2	**571.60**							
75	Labour charges for giving 50mm dia G.I.Pipe End Connections from raising main to cisterns including cutting, threading, conveying, laying and jointing etc, complete inclusive of fixing 4nos of 20mm dia G.I pipes with taps to the cistern (p.No.37 I.No.3.13) RWS SR 2012-13								

		Each	8				8.00		
	Basic rate	1526.80					**8.00**	1572.60	**12580.83**
	Sub Total-1	1526.80							
	3% AW	45.80							
	Sub Total-2	**1572.60**							
76	Earthwork excavation for pipeline trenches including depositing on bank upto a lead of 50mtrs. Including shoring and strutting danger lighting and using sight rails and boning rods at every 100mtrs wherever necessary as directed in following strata manual means - in hard soil (P.No.3 I.No.1.2.A.ii) RWS SR 2012-13								
		Cum	8	45.00	0.60	0.4	86.40		
	Basic rate	206.8					**86.40**	213.00	**18403.55**
	Sub Total-1	206.80							
	3% AW	6.20							
	Sub Total-2	**213.00**							
77	Earthwork excavation for pipeline trenches including depositing on bank upto a lead of 50mtrs. Including shoring and strutting danger lighting and using sight rails and boning rods at every 100mtrs wherever necessary as directed in following strata manual means - in Ordinary rock Without Blasting (P.No.3 I.No.1.2.A.iii) RWS SR 2012-13								
		Cum	8	45	0.60	0.35	75.60		
	Basic rate	478.5					**75.60**	492.86	**37259.84**
	Sub Total-1	478.50							
	3% AW	14.36							
	Sub Total-2	**492.86**							
78	Giving Hydraulic test upto 80mm C.I/RCC/PVC/HDPE or A.C pipelines (P.No.33 I.No.3.7.1) RWS SR 2012-13								
		478.5	8	45			360.00		
	Basic rate	2.2					**360.00**	2.27	**815.76**
	Sub Total-1	2.20							
	3% AW	0.07							
	Sub Total-2	**2.27**	No.						
79	Refilling the Basement and pipeline trenches with selected available earth from trench excavation including watering, consolidation in layers of 15cms thick including disposing of the surplus earth with a lead of 200 meters (P.No.3 I.No.1.6) RWS SR 2012-13								
		cum	8	45	0.60	0.60	129.60		
	Basic rate	67.1					**129.60**	69.11	**8957.04**
	Sub Total-1	67.10							
	3% AW	2.01							
	Sub Total-2	**69.11**							

					A.Sub Total Cost of KPWD SR items		888193.44
						B.Total Construction Cost	9213251.03
82				C.Cost towards PMC / Third Party inspection LS=A*2%			184266.00
83		D.Cost towards 12% GST on KPWD SR Items and PMC Charhes=(A+C)*12%					128695.13
				E.Cost towards 3% KRIDL Charges+ 1% CESS=B*4%			368530.04
84						F.Sub Total=(B+C+D+E)	9894742.20
					G.Miscellaneous and rounding off		5257.80
						H.Total=(F+G)	9900000.00

Certificate

1 The rates adopted based on the, BWSSB SR 2017-18, PRED SR 2012-13, RWS SR 2012-13, KPWD Electrical SR 14-15, PWD SR, Bangalore circle for year 2018-19.

2 The provisions made in the estimate are necessary and essential.

3 The workspot was inspected and work is found to be necessary.

4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

Assistant Engineer
Project Division Yelahanka
BBMP Bangalore

Asst. Executive Engineer,
Project Division Yelahanka
BBMP Bangalore

Executive Engineer, 12/X/18
Project Division Yelahanka
BBMP Bangalore

Administrative Approval

Accorded For Rs.99.00 Lakhs
Head of A/C P-3293
CER NO : 18 Dt: 30/11/18

E.E, (Project)
30/11/18

Technical Sanction

Accorded For Rs99.00lakhs only
Head of A/C P 3293
CER NO:TS/106/18-19 Dt: 30.11.18

TA CE (YNK)